

## UNIT STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: June 1, 1983

SUBJECT: Final Site Screening Study Plan for  
Chain of Rocks Amusement Park Site - St. Louis, MissouriFROM: William J. Keffer  
Chief, EP&R/ENSVTO: John C. Wicklund  
Director, ENSVNAME OF SITE: Chain of Rocks  
St. Louis County, Missouri

SITE LOCATION: Site is located about 0.1 mile south of the intersection of I-270 and Riverview Drive in the northeast corner of the St. Louis metropolitan area. Access to the site is described on the attached recon map taken from the USGS 7 1/2 minute Columbia Bottom, Mo.-Ill. quad sheet. At Exit 65 off 270 go south to the Waterworks administration building and then turn west at the loop at the end of the road. The site is the 9 acre overgrown parking lot immediately northeast of the end of the road. All site drainage is to the southwest.

## SITE HISTORY:

The site is the parking lot area of the former Chain of Rocks Amusement Park. Previous employees of the park, which closed in 1975, have reported that the parking area and possibly Lookaway Drive were sprayed by the Bliss Oil Co. in April or May of each year from the early 1960's until the park closed.

## SAMPLING DETAILS:

The parking area is covered with a well-packed layer of gravel several inches deep. In spots there is evidence of paving an inch or two thick. Where erosion has cut into the area there is evidence in the form of thin black stain layers that the park surface has been sprayed at least a half dozen times. The surface is compacted to the point that jackhammers will probably be needed to reach depths below 6 inches.

## EXPOSURES:

The site is bounded all along the south side by one-story frame single family dwellings which grade into apartments along Lookaway Drive about two blocks south of the site. There are two brick single family dwellings on the north side of the parking area.

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SUPERFUND RECORDS

**OWNERSHIP AND ACCESS:**

1. The 10 acre area in grid portions G thru E, 3 thru 6 is the original amusement park area. It is currently owned by:

Trampe Realty Company (Contact: Stanley Trampe)  
50 Crestwood Executive Center  
Crestwood, Missouri  
842-5902

A signed access agreement has been received from Mr. Trampe authorizing EPA personnel to sample this area at any time.

2. The two residences located west of the park area in G/F, 5/6 are currently owned by:

Russell G. Blackard  
11152 Lookaway Drive  
St. Louis, Missouri 63137

A signed access agreement has been received for this portion of the site area.

3. The vacant land west of the park area in portions of G/F, 3,4,5&6 is owned by:

Mr. Jack Jost  
510 Sandy Port  
Houston, Texas 77079  
713/531-8568

Verbal permission to sample has been received from Mr. Jost and he has been mailed an access form which he agreed to sign and return.

4. The land north of the amusement park parking lot and north of the Lookaway Drive access to the Blackard residence in grid area G thru E, 5.5 to 6 is owned by:

Charter Construction Inc.  
#7 N. Brentwood Boulevard  
St. Louis, Missouri 63105

A signed access agreement has been received to sample this site area.

5. Contacts have been made to identify the 18 property owners along Garden Drive and Dundee Circle in grid areas E/D, 1 thru 5 and the residence owners west of the site in grid areas G/H, 2 thru 4. Seventeen signed access agreements have been completed and the out-of-town owner of the remaining house has been contacted and we will continue to pursue this agreement form.

## SAMPLING INVESTIGATION

### OBJECTIVES:

1. Obtain adequate samples from the allegedly sprayed area to determine the presence or absence of dioxin contamination in the site, and if present, to be able to estimate probable concentration ranges.
2. Obtain samples from likely human exposure areas to serve as a guide for followup intensive sampling.
3. Obtain drainage area samples to determine if erosion and runoff of contaminated material from the site has occurred.

### SPECIFIC SAMPLING RECOMMENDATIONS:

1. Street Sweepings - Street sweepings are collected by push brooms from surface dust deposits in 10 to 20 ft<sup>2</sup> areas of paved streets as an indication of contamination which may be a human exposure hazard through inhalation or dermal contact due to movement of vehicular traffic. Thirteen samples in this category are recommended for the Chain of Rocks site as shown by the open red triangles on the site sketch map. These samples on Lookaway Drive, Garden Drive, Dundee Circle and adjoining streets will provide coverage of all paved street areas in the immediate vicinity of the site. No core samples of these paved streets are recommended for the screening effort since the pavement and curbs appear to be in good shape. Drilling on these streets would be extremely time consuming during the screening effort and could also increase exposures.
2. Soil Core Samples - Multiple aliquot soil core samples are taken in (and adjacent to) the areas of alleged contamination to determine the presence or absence of the residual dioxin material from the contaminated soil. Twenty-five such samples are proposed for the large area of this site. These sample locations are shown as open red rectangles on the site map. Visual observations on this site indicate that little movement of soil has taken place since the alleged spraying and contamination, if present, remains near the surface. At each of the core sample locations it is proposed to take 10, 1" soil cores to a depth of 8 to 10" within a 20' radius of the identified sample point. At five of the identified 25 points, to be selected in the field by the team leader, depth samples in 12" increments will be collected from a single borehole to a depth of 30". At 10% of the core sample locations an additional sample for priority pollutants will be collected.
3. Residential Dust Samples - In areas where streets are not paved or significant human exposure may be possible, our practice is to collect residential dust from owners vacuum sweepers for analyses. For this site, approximately a dozen such samples are proposed around the site with tentative locations, pending contact with property owners, shown as small red circles inside the selected residences.

4. Drainage Samples - Downgradient drainage samples are collected from sediment deposits in stream channels draining the contaminated area. Five such samples are shown as open red triangles for this site. Each sample point represents collected sediments from a 100' stream reach bracketing the shown sample point on the sketch.

5. Yard Samples - Homes adjacent to the alleged sprayed area will have multipel (10) aliquot yard samples taken at 0 to 6" from the backyards to provide information in potential residential exposure for the hazard assessment to be done by health officials. Eight samples are shown for this purpose as small solid red rectangles.

#### IMPLEMENTATION AND GENERAL COMMENTS:

Sample collection and safety procedures will remain identical to those described previously in study plan documents for previous phases of the St. Louis area dioxin investigations. The contaminated intensive area as shown by the open red rectangles grid will be considered as the "high hazard" or red zone for safety purposes and no personnel are to enter this area unless they are in full compliance with the site safety plan.

All access arrangements are to be made by ENSV/Team Leader with local assistance. If access problems are encountered, contact first Conn Roden 314/726-1100 with the St. Louis County Health Department.

It is estimated that under ideal conditions of weather and site access, this effort could be performed in 2 days by a team of 5 persons. Estimated costs are shown below:

1. PC&B Monies - 5 persons x 2 days x 12/hrs/day x \$15/hr	= \$ 1,800
2. Expendable Equipment - 20 set @\$102/set	= \$ 2,040
3. Travel/per diem - 10 days @\$100/day	= \$ 1,000
4. Sample Shipment and TCDD Analysis - 73 x \$450	= \$32,850
5. Sample Analyses - Other Organics - 4 x \$600	= \$ 2,400
6. Communication, coordination, overhead (25% of Total)	= <u>\$10,022</u>
ESTIMATED TOTAL COST	= \$50,112

General Analytical Scheme - All collected samples will be analyzed for 2,3,7,8-TCDD at the 1 ppb detection level. One in 10 samples in the contaminated intensive area (red circles) will be collected in triplicate to facilitate analyses of other potentially present extractable organic materials, as necessary, without using the Region's backup sample.

Sample series numbers for this site will be AP-15, all sample points will be identified for location purposes using grid points of the master site sketches as the principle locator guide. For example, the Blackard residence, northwest of the parking area will be identified as "Sample location F.80, 5.85, Dust, Blackard Residence, 11152 Lookaway Drive" and any other identifiers needed to fully characterize the sample.

Attachments

